

NEW ABSTRACT

A circuit for providing power to a load includes a transformer having a primary winding and a secondary winding, the load being connected to the secondary winding. A switch is coupled to the primary winding, where the on-time and off-time of the switch is controllable by a control element, for generating a voltage pulse over the primary winding. A diode is directly connected in parallel to the primary winding for demagnetizing the transformer during the off-time of the switch. The diode provides a free-running path to demagnetize the transformer if the switch is off. To prevent saturation of the core of the transformer, a subsequent voltage pulse is only applied to the circuit if the free-running current through the diode has become substantially zero.